REMARKS

Claims 121-132, 140 and 141 are pending in the subject application. By this Amendment, applicants have canceled claims 121 and 141 without disclaimer or prejudice. Applicants have amended claims 122, 125-129, 132 and 140. Applicants have added new claims 142-154. New claims 142 and 143 correspond to canceled claim 121. New claims 145-153 correspond to pending claims 122-132. New claim 154 corresponds to pending claim 140. Accordingly, claims 122-132, 140 and 142-154 will be pending in the subject application upon entry of this Amendment.

In view of the arguments below, applicants maintain that the Examiner's rejections have been overcome, and respectfully request that they be withdrawn.

Rejection Under 35 U.S.C. §112, Second Paragraph

The Examiner rejected independent claim 121 and dependent claims 122-132, 140 and 141 under 35 U.S.C. §112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Specifically, the Examiner states that claim 121 is indefinite for reciting "and the signal-transducing protein bound to the cytoplasmic protein" in light of the preamble of claim 121, and "a method of identifying a compound" and "a known compound". The Examiner further invites applicants to point out in the instant specification where it is shown that a known compound

disrupts the interaction between a signal-transducing protein and a cytoplasmic protein.

In response, but without conceding the correctness of the Examiner's rejection, applicants note that claim 121 has been canceled and that corresponding new claims 142 and 143 particularly point out and clearly state the claimed subject matter, thereby obviating the Examiner's rejection. Applicants further note that as detailed in the instant specification, *inter alia* at page 24, line 5, to page 25, line 25, where a method for screening for candidate compounds and the synthesis of those compounds is disclosed. Applicants further point the Examiner's attention to the instant specification, *inter alia* at page 27, lines 8-10, where compounds such as Ac-SLV and Ac-SLY, which were successfully used to disrupt the interaction between Fas and FAP1, are disclosed.

In view of these remarks, applicants maintain that claims 122-132, 140 and 142-154 satisfy the requirements of 35 U.S.C. §112, second paragraph.

Rejections Under 35 U.S.C. §112, First Paragraph

The Examiner rejected claims 121-132, and 139-141 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that applicants had possession of the invention.

Specifically, the Examiner alleges that the claims contain new subject matter. The Examiner alleges that the limitation to the signal transducing proteins being "a composition comprising a peptide selected from the group consisting of amino acid sequences as set forth in SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16" is not supported by the disclosure.

In response, applicants respectfully traverse the Examiner's rejection.

Applicants maintain that the specification at page 6, lines 9-28, page 11, lines 26-31, and Figure 2, where SEQ ID NOs. 9 and 11-16 are disclosed, are specific examples of the signal-transducing protein of the claimed invention. The amino acid sequences as set forth in SEQ ID NOs. 9 and 11-16 are examples of applicants' new consensus sequence (S/T)-X-(V/I/L) composed of only three amino acids found in the carboxyl-terminus of signal transducing proteins that bind to PDZ domains of cytoplasmic proteins. Accordingly, applicants maintain that new claims 142 and 143 do not include new matter, but merely more specifically describe the signal-transducing protein of the claimed methods.

The Examiner further rejected claims 140 and 141 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In response, with respect to claim 141, applicants note that claim 141 has been canceled thereby rendering the Examiner's rejection moot. With respect to claim 140, applicants respectfully traverse the Examiner's rejection.

The test for enablement is whether one skilled in the art could, at the time of the invention, make and use the claimed invention based on the disclosure and the information known in the art without undue experimentation. Applicants maintain that the claimed invention satisfies the test for enablement, and that the Examiner has not set forth sufficient grounds for concluding otherwise.

The subject invention comprises methods of identifying an agent that inhibits the interaction between a signal-transducing protein comprising a peptide selected from the group consisting of amino acid sequences as set forth in SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16 and a cytoplasmic protein comprising the amino acid sequence as set forth in SEQ ID NO:1. This invention is based, in relevant part, on applicants' discovery of the new consensus sequence (S/T)-X-(V/I/L) composed of only three amino acids found in the carboxyl-terminus of signal transducing proteins that bind to PDZ domains of cytoplasmic proteins. SEQ ID NO:1 is the amino acid sequence (G/S/A/E)-L-G-(F/I/L) of PDZ domains of which the amino acid sequence SLGI disclosed in claim 140 is an example. Accordingly, the invention may be practiced using any signal-transducing protein comprising a peptide selected from the group consisting of amino acid sequences as set forth in SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ

ID NO:14, SEQ ID NO:15 and SEQ ID NO:16, all of which contain a sequence within the consensus sequence, to find compounds that will alter the binding of the carboxyl terminus domain to the PDZ domain of cytoplasmic proteins comprising SEQ ID NO:1 of which SLGI is a sequence.

According to M.P.E.P. § 2164.05(a), "[t]he state of the art existing at the filing date of the application is used to determine whether a particular disclosure is enabling". *In re Gunn*, 537 F.2d 1123, 1128, 190 USPQ 402, 405 (CCPA 1976). However, the specification "need not disclose what is well-known to those skilled in the art". *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). As the Examiner concedes on page 12 of the September 23, 2004 Office Action, "[t]he level of skill in the art is acknowledged to be high. Given the details of the consensus sequence and of the interaction between the claimed signal-transducing proteins and cytoplasmic proteins found in the application as filed, applicants maintain that the disclosure provides sufficient guidance which, when combined with the knowledge of the prior art, enables one skilled in the art to practice the instant methods."

Accordingly, applicants maintain that claim 140 satisfies the requirements for enablement of 35 U.S.C. §112, first paragraph.

In view of these remarks, applicants maintain that claim 140 satisfies the requirements of 35 U.S.C. §112, first paragraph.

Rejections Under 35 U.S.C. §103(a)

The Examiner rejected claims 121-132 under 35 U.S.C. §103(a), as allegedly unpatentable over Reed et al (U.S. Patent No. 5,876,939) as evidenced by Niethammer et al. in view of Kornau et al.

Specifically, the Examiner alleges that claims 121-132 due to their indefinite nature are interpreted as encompassing the Fas receptor as one of the signal-transducing proteins which may be used in the claimed methods. The Examiner alleges that Reed et al. disclose a method of identifying an agent that interferes with the ability of FAP to interact with Fas.

In response, applicants note that claim 121 has been canceled and that corresponding new claims 142 and 143 do not encompass the Fas receptor as one of the signal-transducing proteins.

To establish a *prima facie* case of obviousness, the Examiner must demonstrate three requirements with respect to each claim. First, the cited references, when combined, teach or suggest every element of the claim. Second, one of ordinary skill would have been motivated to combine the teachings of the cited references at the time of the invention. And third, there would have been a reasonable expectation that the claimed invention would succeed.

In light of these requirements, applicants maintain that the cited references fail to support a *prima facie* case of obviousness for new claims 142 and 143.

Applicants maintain that none of the references cited by the Examiner, Reed et al., Niethammer et al., or Kornau et al. teaches methods using a signal-transducing protein comprising a peptide selected from the group consisting of amino acid sequences as set forth in SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15 and SEQ ID NO:16. Accordingly, the cited references combined fail to teach each and every element of the claimed methods. Absent such teaching, there could not have been a motive to combine or a reasonable expectation of success.

In view of the above remarks, applicants maintain that the Examiner has failed to set forth a *prima facie* case of obviousness, and that new claims 142 and 143, and their dependent claims, satisfy the requirements of 35 U.S.C. §103(a).

Conclusion

For the reasons set forth hereinabove, applicants respectfully request that the Examiner reconsider and withdraw the rejections, and solicit allowance of the pending claims.

If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorneys invite the Examiner to telephone them at the number provided below.

No fee is deemed necessary in connection with this Amendment. However, if any fee is required, authorization is hereby given to charge the amount of such fee to Deposit Account No. 03-3125.

Respectfully submitted,

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